



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/079,010 | 02/19/2002 | Stephen C. Vincent | P04860US1 | 6367 |

22885 7590 06/19/2006

MCKEE, VOORHEES & SEASE, P.L.C.
801 GRAND AVENUE
SUITE 3200
DES MOINES, IA 50309-2721

| |
|----------|
| EXAMINER |
|----------|

HOANG, TU BA

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

2832

DATE MAILED: 06/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/079,010

Applicant(s)

VINCENT, STEPHEN C.

Examiner

Tu Ba Hoang

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-10,12,13,15 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-10,12,13,15 and 17-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Prosecution on the merits of this application is reopened in view of newly discovered prior art. Rejections based on the newly cited references follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Tatsumi (US 5,317,341). Tatsumi shows a conventional thin film chip resistor 100 (shown in Figures 6a-6c or such ribbon 8) comprising a substrate 1 or 11, a single continuous metal thin film resistive layer 3 or 13 directly attached to the substrate 1 or 11, a non-tantalum chip resistor termination or electrode 4,5 or 14,15 attached on each end of the metal thin film resistive layer 13 (as shown in Figures 1a-1e and 2), an outer protective film or moisture barrier 6 or 16 consisting of tantalum pentoxide (column 1, lines 59-64, noting the phrase “the chipping causes the moisture barrier properties to be lowered”, i.e., the film 6 has also the moisture barrier property) directly overlaying and contacting the metal thin film resistor layer 3 or 13 for reducing failures due to electrolytic corrosion under powered moisture conditions (i.e., as chipping occurred, the electrode 5 may become corroded, leading to various problems), wherein the outer moisture barrier is formed from deposition of tantalum oxide on the metal thin film resistive layer 3 or 13 and not through oxidation of tantalum (column 2, lines 58-60 and column 4, lines 23-25, i.e., the film is adhered directly to the substrate).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 7-10, 12-13, 15, 17-26 are rejected under 35 U.S.C. 103 as being obvious over by Yamada in view of Szupillo, Copetti et al., or Sato (61-27264), and further in view of Tatsumi. Yamada discloses the claimed invention at Fig. 10, except the material of the outer barrier being a moisture barrier made of tantalum pentoxide, and the sputtering of claim 12. The single metal thin film resistive layer of nickel-chrome is at the top of col. 6, meeting claims 8-10, 13 and 15, with double protective layers for claim 15. Sato discloses sputtering a tantalum oxide layer for the purpose of providing a

protective layer so that it would have been obvious to employ a sputtered layer, to replace the protection layer of Yamada, for protection where the references disclose a protection layer or double protection layer for a resistor. Paragraphs 63 and 69 of Copetti et al. disclose dielectrics of tantalum pentoxide, as substitutes for other dielectrics, and providing protection or barriers for nichrome resistors such as that of Yamada, so that it would have been obvious to form one or two layers of such a material where it is a well known protective layer compatible with nichrome resistors as suggested. Szupillo discloses dielectrics of tantalum pentoxide, as substitutes for other dielectrics, and notes that same is a barrier layer, providing protection or barriers for resistors such as that of Yamada, so that it would have been obvious to form one or two layers of such a material where it is a well known protective layer compatible with resistors as suggested, and where Yamada discloses a barrier layer. Tatsumi discloses the use of outer protective film made of tantalum pentoxide having moisture barrier properties (column 1, lines 60-61). Thus to utilize in Yamada in view of Szupillo, Copetti et al., or Sato the outer protective film or moisture barrier taught by Tatsumi in order to provide moisture barrier if so desired would be within the purview of obviousness to one having ordinary skill in the art. For claims 13 and 15, the alumina substrate is at col. 7. As an alternative to claim 12, Copetti discloses depositing the tantalum pentoxide layer, and sputtering is a well-known method of deposition, rendering such a process obvious. Or it is not clear how sputtering the layer renders it distinct from other methods of deposition, so that such a layer is met by deposition as a product by process limitation rendering no distinct structure. For claim 19, Fig. 1 discloses the electrodes 27 wrapping

Art Unit: 2832

around the top. For claim 20, the thin film of nichrome noted above meets the claim. For claim 18, the outer layer can meet the test where it is the same material. There will be no barrier layer upon replacement as suggested. For claims 21-26, the Yamada resistive layer 23 is directly attached to the substrate 21, and there are terminations a known, as well as the moisture barrier consisting essentially of tantalum pentoxide and the passivation layer as modified, so that the claims are met. That is, the claims follow from like claims addressed above, where the process steps follow from the products of like claims. For example, claims 21-22 and 24-25 follow from claim 7, since the tantalum pentoxide layer is an outer moisture barrier layer. See also the remarks with respect to claim 12 for other process steps of deposition. For claims 23 and 26, see claim 15 above, disclosing the passivation layer.

Remark

Applicant's arguments filed 9/7/05 and 04/03/06 have been fully considered, and are not persuasive. However, such arguments are moot due to the new grounds of rejection based on the newly discovered prior art set forth above.

Applicant argues that there is no motivation to replace the screen-printed barrier layer of Yamada. This is not correct. The motivation is as noted. The motivation, or suggestion, for example, is that one known prior art dielectric can be replaced for another since they are both dielectrics and are used as barriers, and are compatible with the same materials used by Yamada, nichrome. Applicant admits at page 10 of his arguments that it would have been obvious to use the material of tantalum pentoxide as an insulative layer, but says it would not have been obvious to use as a moisture barrier

layer. This admission must defeat applicant's arguments since even if the moisture barrier aspect were not recognized, the fact that the function is still performed renders applicant's claims met.


Recognition of an inherent function in prior art obvious devices does not render the claims patentable, especially where there is a barrier. As to Exhibit 1, because all dielectrics do not form good moisture barriers may be one factor to consider, but this does not defeat the motivation. As to Exhibit 2, there is no requirement to give weight to the European patent office or any other office. As to teaching away alleged, no such showing has been made where there is no assertion of inferior results taught in the prior art combination made.

In response to applicant argument that the use of barrier of tantalum pentoxide to form insulation or dielectric barriers that does not necessarily form moisture barriers as the present invention. The Examiner disagrees as for the reason that since the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. In re Best, 562 F.2d 1252, 1254, 195 USPQ 430,433 (CCPA 1977). Also see MPEP 2112[R-3].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu Ba Hoang whose telephone number is (571) 272-4780. The examiner can normally be reached on Mon-Thu from 6:00AM to 6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Tu Ba Hoang
Primary Examiner
Art Unit 2832

June 12, 2006



ELVIN ENAD
SUPERVISORY PATENT EXAMINER

06/12/06